



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

## BDE PROCEDURE MEMORANDUM

**NUMBER: 5-00**

**SUBJECT: Value Engineering Program**

**DATE: April 3, 2000**

---

This memorandum supersedes and replaces BDE Procedure Memorandum 99-33, dated May 1, 1999.

---

### Background

Under 23 CFR, Part 627, the FHWA requires a program be established to improve project quality, reduce project costs, foster innovations, eliminate unnecessary and costly design elements, and to ensure efficient investments through the use of Value Engineering (VE).

### Applicability

The procedures in this memorandum are applicable to all highway projects on the National Highway System (NHS) with an estimated cost of \$25 million or more.

### Definitions

Highway Project - Projects with an estimated cost of \$25 million or more and which are studied and documented in a single Phase I report. Such projects may encompass multiple construction contracts.

Value Engineering (VE) - The systematic application of recognized techniques by a multi-disciplinary team to identify the function of a product or service, establish a worth for that function, generate alternatives through the use of creative thinking, and provide the needed functions to accomplish the original purpose of the project, reliably and at the lowest life-cycle cost without sacrificing safety, necessary quality, and environmental attributes of the project.

### Procedures

- (a) **Project Selection.** Each district identifies applicable projects during the preparation of the multi-year program. Due to the complexity and scope of large projects, more than one VE study may be desirable. Other projects not meeting the definition may be selected for this program.

## BDE PROCEDURE MEMORANDUM 5-00

April 3, 2000

Page 2

(b) **Project Cost.** Costs associated with environmental studies, preliminary engineering, final design, land acquisition and construction should be used in determining the selected project's cost. The project cost includes state, local agency, and Federal-aid highway funds.

(c) **Scope of Studies.**

(1) Initiation of VE Study. Schedule VE studies in such a manner so as not to cause delay of the project. For a Phase I report with multiple construction contracts, develop a plan for conducting the VE study(s) based on the Phase I considerations and the nature and complexity of the work type, (e.g., One VE study may cover alike construction projects.) A single VE study should cover as many construction contracts under the single Phase I report as practicable and beneficial. Initiate the VE study no later than the time the construction plans are 50% complete and to allow for the implementation of the recommendations without delaying the project.

(2) Team Makeup. The VE team, selected by the district, consists of individuals not personally involved in the design of the project. The team leader should have attended the NHI course on Value Engineering or have equivalent experience in the preparation of VE studies. When making up the team take into account the following:

- Draw team members from either the district or central office;
- Consider individuals from specialty areas depending on the project scope;
- Assign personnel from construction, maintenance, and studies and plans (as applicable);
- Include representatives from environment, operations, and land acquisition as necessary;
- and
- Include individuals from the public and other agencies when in the public interest.

Qualified consultants may be retained to conduct VE studies provided the consultant has not worked on the subject project.

(3) Process. To best accomplish the goals of Value Engineering, the districts have considerable latitude in determining the type, size, and complexity of a VE study. Value engineering studies should follow widely recognized problem solving principles.

(4) Final Report. Each Study concludes with a formal VE report which outlines the decisions and recommendations and is presented to the district engineer or his/her representative. Each district establishes a procedure for prompt review and implementation of the approved recommendations. When any recommendation is a major change to an approved Design Report or is a design exception to policy, the

**BDE PROCEDURE MEMORANDUM 5-00**

**April 3, 2000**

**Page 3**

recommended change is coordinated through the appropriate central bureau.

- (5) Monitoring. Each district appoints a VE coordinator who is knowledgeable in VE studies. The VE coordinator's responsibilities include monitoring each VE study from initiation through the final report, reviewing the report, and assisting in the implementation of the findings. During the month of October, each year, the district VE coordinator sends the Bureau of Design and Environment's VE coordinator a list which itemizes the total number of VE studies conducted over the past year and the estimated cost savings for each study. BDE will summarize the information and forward it to the FHWA.

Engineer of Design & Environment

Michael L. Hine